Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Original) A method of measuring an object with a coordinate positioning apparatus, comprising the following steps, in any suitable order:

placing the object within the working volume of the coordinate positioning apparatus;

measuring the object with a workpiece contacting probe to create measurement data of the object, the measurement data being collected at multiple probe forces;

for at least one location on the surface of the object, determining a function or look up table relating the measurement error data to the probe force;

for said at least one location on the surface of the object, using the function or look up table to determine the measurement data corresponding to zero probe force;

and outputting the measurement data corresponding to zero probe force as the measurement of the object.

2. (Original) A method according to claim 1 wherein the measurement data corresponding to zero measurement force is determined by extrapolation.

3. (Currently Amended) A method according to ~~any of claims 1 or 2~~claim 1 wherein the measurement data is collected at known constant probe forces.

4. (Currently Amended) A method according to ~~any of claims 1 or 2~~claim 1 wherein the measurement data is collected at known varying probe force.

5. (Currently Amended) A method according to ~~any preceding claim~~claim 1 wherein the step of measuring the object with a workpiece contacting probe comprises scanning the object.

6. (Currently Amended) A method according to ~~any preceding claim~~claim 1 wherein the function is a linear function.

7. (Currently Amended) A method according to ~~any of claims 1-5~~claim 1 wherein the function is a parametric function.

8. (Currently Amended) A method according to ~~any preceding claim~~claim 1, wherein:

the object is measured along a scan path and measurement data is collected at multiple probe forces for a section of the scan path;

the function or look up table relating the measurement data to the probe force is determined for locations on said section of the scan path;

and wherein for locations on the scan path but not on said section of the scan path, the function or look up table relating the measurement data to the probe force is determined from measurement data collected on said section of the scan path.

9. (Original) A method according to claim 8 wherein the function or look up table relating the measurement data to the probe force for locations on the scan path but not on said section of the scan path is determined from component parts of the function or look up table relating the measurement data to the probe force on said section of the scan path.

10. (Currently Amended) A method according to ~~any of claims 8 or 9~~claim 8 wherein the object may be measured along the scan path by scanning a surface profile for one revolution at a constant or variable probe deflection or probe force.

11. (Currently Amended) A method according to ~~any of claims 8-10~~claim 8 wherein measurement data is collected at multiple probe forces for a section of the scan path by taking additional measurements on the scan path at a different probe force.

12. (Original) A method according to claim 11 wherein the additional measurements are taken by scanning the surface profile for at least a quarter revolution.

13. (Original) A method according to claim 11 wherein the measurements are taken by taking measurements of the surface profile as the probe is moved radially towards or away from the surface at at least two different locations.

14. (Original) A method of measuring an object with a coordinate positioning apparatus, comprising the following steps, in any suitable order:

placing the object within the working volume of the coordinate positioning apparatus;

measuring the object with a workpiece contacting probe to create measurement data of the object, the measurement data being collected at multiple stylus deflections;

for at least one location on the surface of the object, determining a function or look up table relating the measurement error data to the stylus deflection;

for said at least one location on the surface of the object, using the function or look up table to determine the measurement data corresponding to zero stylus deflection;

and outputting the measurement data corresponding to zero stylus deflection as the measurement of the object.

15. (Original) A method according to claim 14 wherein the measurement data corresponding to zero stylus deflection is determined by extrapolation.

16. (Currently Amended) A method according to ~~any of claims 14 or 15~~claim 14 wherein the measurement data is collected at known constant stylus deflections.

17. (Currently Amended) A method according to ~~any of claims 14 or 15~~claim 14 wherein the measurement data is collected at known varying stylus deflection.

18. (Currently Amended) A method according to ~~any of claims 14-17~~claim 14 wherein the step of measuring the object with a workpiece contacting probe comprises scanning the object.

19. (Currently Amended) A method according to ~~any of claims 14-18~~claim 14 wherein the function is a linear function.

20. (Currently Amended) A method according to ~~any of claims 14-18~~claim 14 wherein the function is a parametric function.

21. (Currently Amended) A method according to ~~any of claims 14-20~~claim 14, wherein:

the object is measured along a scan path and measurement data is collected at multiple

stylus deflections for a section of the scan path;

the function or look up table relating the measurement data to the stylus deflection is

determined for locations on said section of the scan path;

and wherein for locations on the scan path but not on said section of the scan path, the

function or look up table relating the measurement data to the stylus deflection is determined

from measurement data collected on said section of the scan path.

22. (Original) A method according to claim 21 wherein the function or look up table

relating the measurement data to the stylus deflection for locations on the scan path but not on

said section of the scan path is determined from component parts of the function or look up

table relating the measurement data to the stylus deflection on said section of the scan path.

23. (Currently Amended) A method according to any ~~of claims 21 or 22~~claim 21

wherein the object may be measured along the scan path by scanning a surface profile for one

revolution at a constant or variable stylus deflection.

24. (Currently Amended) A method according to ~~any of claims 21-23~~claim 21

wherein measurement data is collected at multiple stylus deflections for a section of the scan

path by taking additional measurements on the scan path at a different stylus deflection.

25. (Original) A method according to claim 24 wherein the additional measurements

are taken by scanning the surface profile for at least a quarter revolution.

26. (Original) A method according to claim 24 wherein the measurements are taken by taking measurements of the surface profile as the probe is moved radially towards or away from the surface at at least two different locations.